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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,088	01/18/2006	Tino Hansel	INA-PT169(4248-18-US)	5596
3624 7590 08/03/2009 VOLPE AND KOENIG, P.C. UNITED PLAZA, SUITE 1600 30 SOUTH 17TH STREET PHILADELPHIA, PA 19103			EXAMINER ALTUN, NURI B	
			ART UNIT 3657	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/565,088

**Applicant(s)**

HANSEL, TINO

**Examiner**

Nuri Boran ALTUN

**Art Unit**

3657

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Amendment received on 02/20/2009 has been acknowledged. Claims 1-16 have been amended. New claim 17 has been added.

#### ***Specification***

Previous objection to the specification has been overcome.

#### ***Claim Objections***

Previous claim objection has been overcome.

#### ***Claim Rejections - 35 USC § 112***

Previous claim rejections under 35 USC 112 have been overcome.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims **4 and 6** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites preventing full-load operation of the internal combustion engine for a fuel pump function disruption, however it is not clear what part of the power transmission drive prevents full-load operation of the internal combustion engine.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1, 3, 8, 10-14 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by **Kadota et al. (JP 62035154)**.

**As per claim 1**, Kadota et al. teach a power transmission drive comprising a synchronous drive for an internal combustion engine, with which a rotating angle between a driven member and a drive member can be detected (see abstract; detection is done through 51a),

wherein a member of the power transmission drive includes an electronic controller (51b) which interacts with a control system of the internal combustion engine,

wherein a sensor (51a), comprising a transducer, detects an oscillating angle deviation, a rotating angle deviation, an irregularity in rpm, or a correcting movement between the driven member (33) and the drive member (39) and sends a signal to the controller (51b), which calculates a control parameter, wherein after a defined limit value is exceeded, the controller initiates an emergency program of the internal combustion engine to operate the internal combustion engine at a lower power level (see abstract; phase difference exceeding is considered as an emergency program during which the gear skip of the belt is prevented by limiting output increase of the engine).

**As per claim 3**, Kadota et al. teach for forming a coupled drive, a power transmission means of the power transmission drive is connected to a running wheel (39) of the power transmission drive acting as a control drive for the internal combustion engine.

**As per claim 8**, Kadota et al teach the sensor (51a) is allocated to a unit of the power transmission drive (see Fig. 1).

**As per claim 10**, Kadota et al teach measurement values, which exceed the limit value, and also measurement values, which correspond to a tolerance range preset for the limit value, are stored in a fault memory of the controller (see Fig. 1 and abstract; it is inherent that inputs are stored in a memory of the controller).

**As per claim 11**, Kadota et al. teach the measurement of the rotating angle deviation between the drive member and the driven member is taken for a warm-running internal combustion engine (see abstract; since the measurements are taken continuously during the operation of the engine, it is construed that measurements are taken for a warm-running internal combustion engine, also).

**As per claim 12**, Kadota et al. teach in an operating state of the internal combustion engine, in connection with the at least one sensor (51a) and the controller (51b), a continuous comparison of measurement values is performed by the controller for determining an oscillating angle deviation, an irregularity in rpm, or a rotating angle deviation between the driven member (33) and the drive member (39) (see abstract).

**As per claim 13**, Kadota et al. teach the power transmission means for the power transmission drive comprises a toothed belt (41) (see Fig. 1 and abstract).

**As per claim 14**, Kadota et al. teach a tensioning device is allocated to a loose section of the power transmission drive (see Fig. 1).

**As per claim 17**, Kadota et al. teach the unit of the power transmission drive comprises a deflection roller (33, 39).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims **2 and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kadota et al. (JP 62035154)**, in view of **Inada (JP 2003184682)**.

**As per claim 2**, Kadota et al. teach all the structural elements of the claimed invention, as mentioned in claim 1 above, but don't explicitly disclose a free engine clutch allocated to the driven member or the drive member protects a drive for an accelerated angular velocity of the power transmission drive.

Inada teaches a fuel injection pump (40) with the concept of a free engine clutch (50) preventing reverse rotation of the pump (see abstract).

Based on the teachings of Inada, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the drive method and emergency program of Kadota et al. to include a clutch/fuel pump system as taught by Inada in the drive member in order to provide same benefits for a proper belt tension in a diesel engine.

**As per claim 7**, Inada teaches the free engine clutch (50) comprises a clamping body free-wheel or a clamping roller free-wheel (see Figs. 1 and 2).

Claims **4-6 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kadota et al. (JP 62035154)**, in view of **Inada (JP 2003184682)**.

**As per claim 4**, Kadota et al. teach preventing full-load operation of the engine by limiting an increase in output of engine in case of an angle deviation between drive and driven gears, but don't explicitly disclose the power transmission drive includes, as a drive member, a fuel pump, which, in connection with a free engine clutch, prevents full-load operation of the internal combustion engine for a disruption in a function of the fuel pump.

Inada teaches the power transmission drive includes, as a drive member (15), a fuel pump (40), which, in connection with a free engine clutch (50), prevents full-load operation of the internal combustion engine for a disruption in a function of the fuel pump (see abstract).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the drive of Kadota et al. to include the pump and clutch taught by Inada in order to prevent reverse rotation of the pump.

Also see the 35 USC 112 2<sup>nd</sup> paragraph rejection above.

**As per claim 5**, Inada teaches a free engine clutch (50) is arranged in a running wheel (see Fig. 1) between an inner ring locked in rotation with a pump shaft (15) and an outer ring of the running wheel (see Figs. 1 and 2).

**As per claim 6**, Inada teaches the free engine clutch (50) is inserted within a housing of the fuel pump (40) and connects to two journals of the pump, which is a high-pressure pump (see Figs. 1 and 2).

**As per claim 15**, Inada teaches the fuel pump (40), which is pivotally supported against a spring element (24) simultaneously acts as a tensioning device of the power transmission drive (see Fig. 2; it is inherent that pump supported against a spring acts as a tensioning device.)

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kadota et al. (JP 62035154)**, in view of **Inagaki et al. (JP 62,180,157)**.

**As per claim 9**, Kadota et al. teach all the structural elements of the claimed invention, as mentioned in claim 1 above, but don't explicitly disclose after an oscillating angle deviation, rotating angle deviation, or irregularity in rpm set as a limit value has been exceeded, the controller triggers an acoustic and/or optical signal (see Fig. 8 and page 2 paragraph 2 lower left).

Inagaki et al. teach after an oscillating angle deviation, rotating angle deviation, or irregularity in rpm set as a limit value has been exceeded, the controller triggers an optical signal (see Fig. 8 and page 2 paragraph 2 lower left).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mechanism of Kadota et al. to include the optical signal by the controller in order to inform the user of an emergency with a visual indicator.



Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kadota et al. (JP 62035154)**, in view of **Wilmore (20040251758)**.

Kadota et al. combination teach all the structural elements of the claimed invention, as mentioned in claim 1 above, but don't explicitly disclose the power transmission drive includes a starter generator, with which the internal combustion engine is started in a start mode, and the internal combustion engine drives the power transmission drive in a generator mode.

Wilmore teaches a hybrid propulsion system for a motor vehicle having the power transmission drive including a starter generator (ISG), with which the internal combustion engine (ICE) is started in a start mode, and the internal combustion engine drives the power transmission drive in a generator mode (see paragraphs 0018 and 0019).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mechanism of Kadota et al. to include the concepts of start and generator modes as taught by Wilmore in order to achieve greater fuel economy and lower emissions.

### ***Response to Arguments***

Applicant argues that claim 4 requires full-load operation of the engine is prevented for a disruption in a function of the fuel pump which is not taught by Inada reference. The examiner notes that Kadota et al. teach preventing full-load operation of the engine by limiting an increase in output of engine in case of an angle deviation between drive and driven gears, but Kadota et al. don't explicitly disclose a fuel pump

as a drive member. The examiner also notes that the abstract of Inada states that in case of fuel leakage caused by temperature rise and pressure rise caused by pump reverse rotation, the one-way clutch cancels transmission of driving force from driving shaft to the inner rotor preventing pump reverse rotation and fuel leakage (pump function disruption). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mechanism of Kadota et al. to include the pump and clutch as a drive member taught by Inada in order to prevent reverse rotation of the pump.

Also see the 35 USC 112 2<sup>nd</sup> paragraph rejection above.

The rest of the applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nuri Boran ALTUN whose telephone number is (571)270-5807. The examiner can normally be reached on Mon - Fri 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on (571) 272 7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bradley T King/  
Primary Examiner, Art Unit 3657

NBA